

A-3

**U.S. Patent Nos. 6,337,746 & 6,618,157**

**ATTACHMENT 3**

**Overview of Brother MFC-9120CN Printer**

Plaintiff accuses the making, using, selling, offering for sale and importation of Brother color printer models DCP 9040, DCP 9042, DCP 9045, DCP 9010CN, MFC-9010CN, MFC-9120CN, MFC-9320CW, HL-3040CN HL-3070CW, HL-4040CDN, HL-4070CDW, HL-4150CDN, HL-4570CDW, HL-4570CDWT, DCP-7030, DCP-7040, DCP-8080DN, DCP-8085DN of constituting direct infringement of U.S. Patent Nos. 6,337,746 and 6,618,157 (hereinafter “the Patents-in-Suit”). As an exemplary and typical model, the MFC-9120CN printer is charted below. The term “Accused System and Method” means the foregoing printer models sold by Brother and all other models that are substantially similar.

Plaintiff further accuses Brother of indirectly infringing the Patents-in-Suit through providing, authorizing and instructing regarding the Accused System and Method to others, including Brother’s customers. Installing the Accused System and Method and the operation thereof directly infringe the asserted claims. Brother intends to cause infringement by its customers and users. Brother instructs users to install the software and associated hardware of the Accused System and Method. As such, Brother instructs users to configure and operate the Accused System and Method in an infringing manner. Brother also provides installation, maintenance and support services for the Accused System and Method, including providing instruction, tools, manuals, guides, online materials, support and consulting services.

The asserted claims include elements that are implemented, at least in part, by software in the Accused System and Method. The precise processes and algorithms used in them are held secret, at least in part, and are not publicly available in their entirety. An analysis of Brother’s documentation is necessary to fully and accurately describe all infringing features and functionality of the Accused System and Method and, accordingly, plaintiff reserves the right to supplement these contentions once such information is made available to plaintiff. Furthermore, plaintiff reserves the right to revise these contentions in view of the Court’s final claim construction in this action.

U.S. Patent Nos. 6,337,746 & 6,618,157



U.S. Patent No. 6,337,746

<p>1. Apparatus for printing a graphic image on a substrate, comprising:</p>	<p>The Accused System and Method is designed to print on a substrate. For example, the Accused System and Method is used for cut-sheet materials.</p> <div><div>Print</div><div>back to top</div><table><tr><td>Print Technology</td><td>Digital Color LED</td></tr><tr><td>Consumable Type</td><td>Toner Cartridge &amp; Drum Unit</td></tr><tr><td>Max. Black Print Speed (ppm)</td><td>17ppm Black</td></tr><tr><td>Max. Color Print Speed (ppm)</td><td>17ppm Color</td></tr><tr><td>Print Resolution (maximum dpi)</td><td>Up to 600 x 2400 dpi</td></tr><tr><td>Standard Input Paper Capacity (sheets)*</td><td>250 Sheet Paper Capacity</td></tr><tr><td>Multi-purpose Tray</td><td>Single-sheet manual bypass slot</td></tr><tr><td>Standard Interface(s)</td><td>Ethernet and Hi-Speed USB 2.0</td></tr><tr><td>Standard Memory (MB)</td><td>64MB</td></tr><tr><td>Optional Memory (MB)</td><td>Yes (up to 576MB)*</td></tr><tr><td>Printer Driver Compatibility†</td><td>Windows® &amp; Mac OS®</td></tr><tr><td>Mobile device printing app‡</td><td>Brother® iPrint&amp;Scan free app download for wireless printing (JPEG images) from and scanning to your Android™ Smartphone</td></tr><tr><td>Emulation(s)</td><td>PCL6 &amp; BR-Script 3‡</td></tr><tr><td>Secure Print Function</td><td>Yes</td></tr><tr><td>Maximum Monthly Duty Cycle‡</td><td>25,000 pages</td></tr><tr><td>Recommended Monthly Print Volume‡</td><td>300 to 1,500 pages</td></tr></table><p><a href="http://www.brother-usa.com/MFC/modeldetail.aspx?PRODUCTID=MFC9120CN&amp;tab=spec">http://www.brother-usa.com/MFC/modeldetail.aspx?PRODUCTID=MFC9120CN&amp;tab=spec</a> (3/31/11)</p></div>	Print Technology	Digital Color LED	Consumable Type	Toner Cartridge & Drum Unit	Max. Black Print Speed (ppm)	17ppm Black	Max. Color Print Speed (ppm)	17ppm Color	Print Resolution (maximum dpi)	Up to 600 x 2400 dpi	Standard Input Paper Capacity (sheets)*	250 Sheet Paper Capacity	Multi-purpose Tray	Single-sheet manual bypass slot	Standard Interface(s)	Ethernet and Hi-Speed USB 2.0	Standard Memory (MB)	64MB	Optional Memory (MB)	Yes (up to 576MB)*	Printer Driver Compatibility†	Windows® & Mac OS®	Mobile device printing app‡	Brother® iPrint&Scan free app download for wireless printing (JPEG images) from and scanning to your Android™ Smartphone	Emulation(s)	PCL6 & BR-Script 3‡	Secure Print Function	Yes	Maximum Monthly Duty Cycle‡	25,000 pages	Recommended Monthly Print Volume‡	300 to 1,500 pages
Print Technology	Digital Color LED																																
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Maximum Monthly Duty Cycle‡	25,000 pages																																
Recommended Monthly Print Volume‡	300 to 1,500 pages																																
<p>a computer containing at least one motherboard which carries a data bus and</p>	<p>The Accused System and Method is driven by a computer containing a motherboard with a data bus and memory. The computer is controlled by an operating system.</p>																																

U.S. Patent Nos. 6,337,746 & 6,618,157

a random access memory, said computer being controlled by an operating system;

MFC-9120CN Supported Functions				
Computer Platform & Operating System		Supported Functions	Interface	
Windows® Operating System¹	Windows® 2000 Professional¹	Printing, PC Fax¹, Scanning	USB³, 10/100Base-TX (Ethernet)	
	Windows® XP Home Edition¹,²,⁵			
	Windows® XP Professional¹,²,⁵			
	Windows® XP Professional x64 Edition²			
	Windows Vista®²			
	Windows® 7²	Printing	10/100Base-TX (Ethernet)	
	Windows Server® 2003 (print only via network)			
	Windows Server® 2003 x64 Edition (print only via network)			
Macintosh® Operating System	Windows Server® 2008 (print only via network)	Printing, PC Fax¹ Send, Scanning	USB³, 10/100Base-TX (Ethernet)	
	Mac OS® X 10.3.9 - 10.4.3			
	Mac OS® X 10.4.4 or greater			

MFC-9120CN Minimum System Requirements				
Computer Platform & Operating System		Minimum Processor	Recommended RAM	Required Hard Disk Space
Windows® Operating System¹	Windows® 2000 Professional¹	Intel® Pentium® II or equivalent	256 MB	460 MB
	Windows® XP Home Edition¹,²,⁵			
	Windows® XP Professional¹,²,⁵			
	Windows® XP Professional x64 Edition²	64-bit (Intel®64 or AMD64) processors	512 MB	
	Windows Vista®²	Intel® Pentium® 4 or equivalent 64-bit processors (Intel®64 or AMD64)	1 GB	1 GB
	Windows® 7²		1 GB(32-bit) 2 GB(64-bit)	1.18 GB
	Windows Server® 2003 (print only via network)	Intel® Pentium® III or equivalent	512 MB	50 MB
	Windows Server® 2003 x64 Edition (print only via network)	64-bit (Intel®64 or AMD64) processors		
Macintosh® Operating System	Windows Server® 2008 (print only via network)	Intel® Pentium® 4 or equivalent 64-bit processors (Intel®64 or AMD64)	2 GB	
	Mac OS® X 10.3.9 - 10.4.3	PowerPC G4/G5 PowerPC G3 350MHz	256 MB	480 MB
	Mac OS® X 10.4.4 or greater	PowerPC G4/G5 Intel® Core™ Processor	1 GB	

Conditions:  
<http://www.brother-usa.com/MFC/ModelDisclaimer.aspx?Model=MFC9120CN#SysReqs> (3/31/11)

Full Driver & Software Package

We recommend this download to get the most functionality out of your Brother machine. This is a comprehensive file of available drivers and software for the Brother machine.

Language	Version	Size	Release Date	File
English	A2	43.25MB	12/27/2010	<a href="#">Download &amp; Information</a>

[http://welcome.solutions.brother.com/bsc/public/us/us/en/dlf/download\\_index.html?reg=us&c=us&lang=en&prod=mfc9120cn\\_all&dldid=&flang=English&os=7&type2=-1](http://welcome.solutions.brother.com/bsc/public/us/us/en/dlf/download_index.html?reg=us&c=us&lang=en&prod=mfc9120cn_all&dldid=&flang=English&os=7&type2=-1) (3/31/11)

U.S. Patent Nos. 6,337,746 & 6,618,157



[http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002533/cv\\_mfc9120cn\\_usaeng\\_soft.pdf](http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002533/cv_mfc9120cn_usaeng_soft.pdf) p.13 (3/31/11)



## U.S. Patent Nos. 6,337,746 &amp; 6,618,157



USB

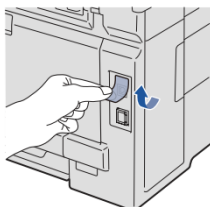
Windows®


## 19 Connect the USB cable

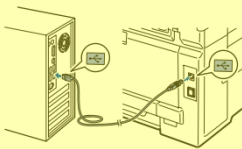
### IMPORTANT

- DO NOT connect the machine to a USB port on a keyboard or a non-powered USB hub.
- Connect the machine directly to your computer.

- a** Remove the label covering the USB interface connector.



- b** Connect the USB cable to the USB connector on the machine marked with the  symbol. Then connect the cable to your computer.



## 20 Connect the power cord

- a** Plug the AC power cord into an AC outlet. Turn the power switch on.



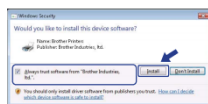
The installation will continue automatically. The installation screens appear one after another.

### IMPORTANT

DO NOT cancel any of the screens during the installation. It may take a few seconds for all screens to appear.

### Note

For Windows Vista®, when this screen appears, click the check box and click **Install** to complete the installation correctly.




- b** When the On-Line Registration screen is displayed, make your selection and follow the on-screen instructions. Once you have completed the registration process, close your web browser to return to this window. Then click **Next**.



[http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002559/mfc9120cn\\_usaeng\\_qsg\\_ls8243001\\_a.pdf](http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002559/mfc9120cn_usaeng_qsg_ls8243001_a.pdf) (3/31/11)

## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

	<div data-bbox="483 195 535 247" data-label="Image"></div> <div data-bbox="571 199 781 233" data-label="Section-Header"><b>Wired Network</b></div> <div data-bbox="928 203 1084 237" data-label="Text"><b>Windows®</b></div> <p data-bbox="483 268 998 336"><b>For Wired Network Interface Users</b> (Windows® 2000 Professional/XP/XP Professional x64 Edition/ Windows Vista®)</p> <div data-bbox="488 363 708 417" data-label="Section-Header"><b>17 Before you install</b></div> <p data-bbox="483 428 763 464"><b>a</b> Make sure that your computer is ON and you are logged on with Administrator rights.</p> <div data-bbox="488 472 768 672" data-label="List-Group"> <p><b>! IMPORTANT</b></p> <ul style="list-style-type: none"> <li>• If there are any programs running, close them.</li> <li>• The screens may differ depending on the operating system.</li> <li>• The supplied CD-ROM includes ScanSoft™ PaperPort™ 11SE. This software supports Windows® 2000 (SP4 or greater), XP (SP2 or greater), XP Professional x64 Edition and Windows Vista®. Update to the latest Windows® Service Pack before installing MFL-Pro Suite.</li> </ul> </div> <div data-bbox="488 688 768 846" data-label="List-Group"> <p><b>! IMPORTANT</b></p> <p><b>Disable all personal firewall software (other than Windows® Firewall), anti-spyware or antivirus applications for the duration of the installation.</b></p> </div> <p data-bbox="483 854 734 875"><b>b</b> Unplug the machine from the AC outlet.</p> <div data-bbox="548 892 704 1033" data-label="Image"></div> <div data-bbox="800 363 1049 415" data-label="Section-Header"><b>18 Connect the network cable</b></div> <p data-bbox="795 428 1081 478"><b>a</b> Connect the network interface cable to the LAN connector marked with a  symbol and then connect it to a free port on your hub.</p> <div data-bbox="800 489 1081 634" data-label="Image"></div> <div data-bbox="800 663 1073 716" data-label="Section-Header"><b>19 Connect the power cord</b></div> <p data-bbox="795 728 1081 764"><b>a</b> Plug the AC power cord into an AC outlet. Turn the power switch on.</p> <div data-bbox="852 772 1023 833" data-label="Image"></div> <p data-bbox="462 1039 1502 1113"><a href="http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002559/mfc9120cn_usaeng_qsg_ls8243001_a.pdf">http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002559/mfc9120cn_usaeng_qsg_ls8243001_a.pdf</a> (3/31/11)</p>
means for storing image data in said random access memory;	The Accused System and Method stores image data in RAM.

## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

MFC-9120CN Supported Functions			
Computer Platform & Operating System		Supported Functions	Interface
Windows® Operating System <sup>1</sup>	Windows® 2000 Professional <sup>5</sup>	Printing, PC Fax <sup>1</sup> , Scanning	USB <sup>3</sup> , 10/100Base-TX (Ethernet)
	Windows® XP Home Edition <sup>2,5</sup>		
	Windows® XP Professional <sup>2,5</sup>		
	Windows® XP Professional x64 Edition <sup>2</sup>		
	Windows Vista® <sup>2</sup>		
	Windows® 7 <sup>2</sup>		
	Windows Server® 2003 (print only via network)	Printing	10/100Base-TX (Ethernet)
	Windows Server® 2003 x64 Edition (print only via network)		
	Windows Server® 2008 (print only via network)		
Macintosh® Operating System	Mac OS® X 10.3.9 - 10.4.3	Printing, PC Fax <sup>1</sup> Send, Scanning	USB <sup>3</sup> , 10/100Base-TX (Ethernet)
	Mac OS® X 10.4.4 or greater		

MFC-9120CN Minimum System Requirements				
Computer Platform & Operating System		Minimum Processor	Recommended RAM	Required Hard Disk Space
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	Windows® XP Home Edition <sup>2,5</sup>			
	Windows® XP Professional <sup>2,5</sup>	64-bit (Intel®64 or AMD64) processors	512 MB	1 GB
	Windows® XP Professional x64 Edition <sup>2</sup>			
	Windows Vista® <sup>2</sup>	Intel® Pentium® 4 or equivalent 64-bit processors (Intel®64 or AMD64)	1 GB	1 GB
	Windows® 7 <sup>2</sup>		1 GB(32-bit) 2 GB(64-bit)	1.18 GB
	Windows Server® 2003 (print only via network)	Intel® Pentium® III or equivalent	512 MB	50 MB
	Windows Server® 2003 x64 Edition (print only via network)	64-bit (Intel®64 or AMD64) processors		
	Windows Server® 2008 (print only via network)	Intel® Pentium® 4 or equivalent 64-bit processors (Intel®64 or AMD64)	2 GB	
Macintosh® Operating System	Mac OS® X 10.3.9 - 10.4.3	PowerPC G4/G5 350MHz	256 MB	480 MB
	Mac OS® X 10.4.4 or greater	PowerPC G4/G5 Intel® Core Processor	1 GB	

Conditions:

<http://www.brother->[usa.com/MFC/ModelDisclaimer.aspx?Model=MFC9120CN#SysReqs](http://www.brother-usa.com/MFC/ModelDisclaimer.aspx?Model=MFC9120CN#SysReqs) (3/31/11)

## Full Driver &amp; Software Package

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[http://welcome.solutions.brother.com/bsc/public/us/us/en/dlf/download\\_index.html?reg=us&c=us&lang=en&prod=mfc9120cn\\_all&dld=&flang=English&os=7&type2=-1](http://welcome.solutions.brother.com/bsc/public/us/us/en/dlf/download_index.html?reg=us&c=us&lang=en&prod=mfc9120cn_all&dld=&flang=English&os=7&type2=-1) (3/31/11)



U.S. Patent Nos. 6,337,746 & 6,618,157



[http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002533/cv\\_mfc9120cn\\_usaeng\\_soft.pdf](http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002533/cv_mfc9120cn_usaeng_soft.pdf) p.13 (3/31/11)

at least one interface card connected to said data bus and having a serial port connected to the data bus, a printing device interface, and means for transferring stored image data from said random access memory to said printing device interface;

The Accused System and Method incorporate an interface card connected to a data bus. The interface card includes serial ports (including Ethernet and/or USB).

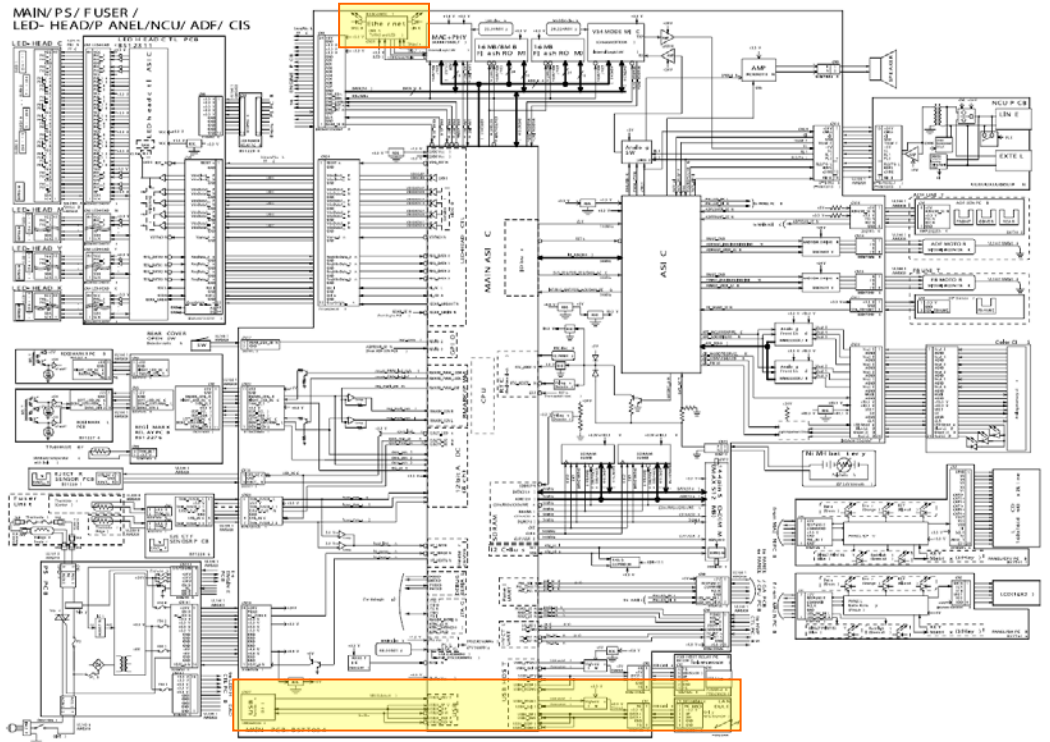


USB Serial Port and Ethernet

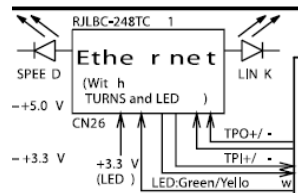
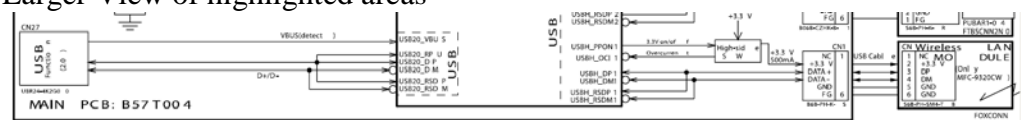
U.S. Patent Nos. 6,337,746 & 6,618,157



## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

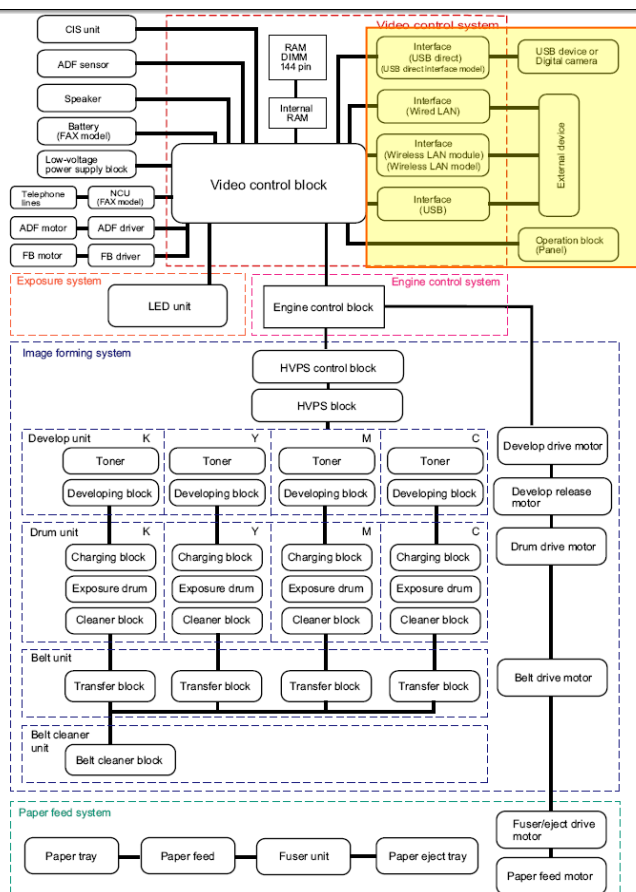


## Larger View of highlighted areas



Brother MFC-9120CW Service Manual, p. 8-12

## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

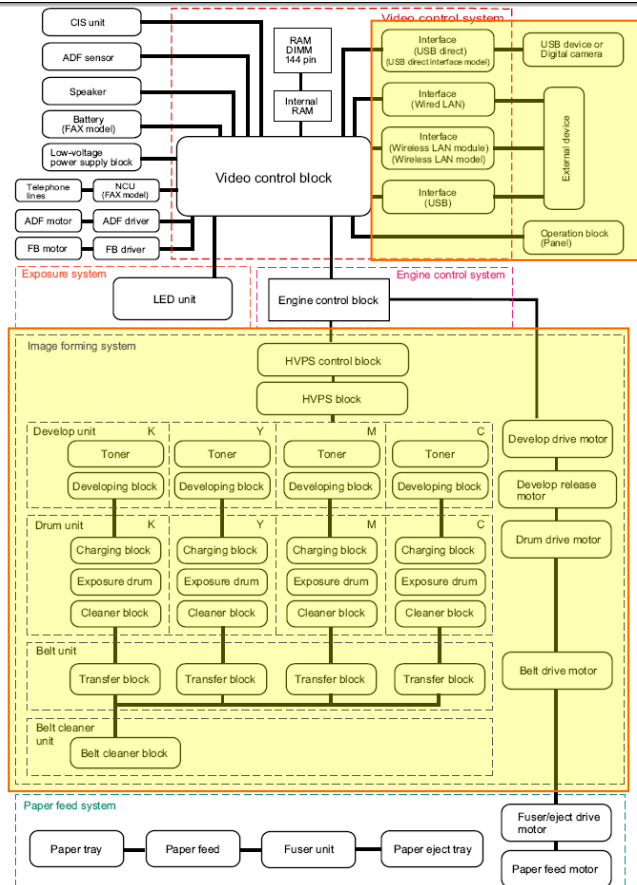


Brother MFC-9120CW Service Manual, p. 2-1

a digital printing device connected to said interface for printing the graphic image on the substrate on the basis of stored image data transferred from said random access memory, the digital printing device communicating with the data bus via the serial port;

The Accused System and Method include digital printing devices, which receive formatted digital data. This data is provided to the laser heads on the printer, which in turn activates to fuse color toners on print substrates to produce color images. Signals are communicated via the serial port.

## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

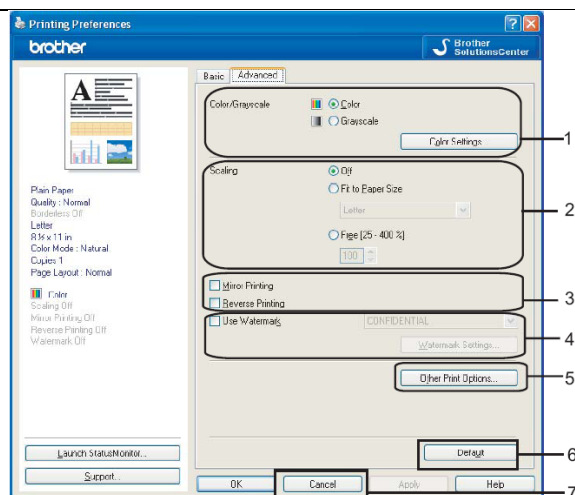


Brother MFC-9120CW Service Manual, p. 2-1





## U.S. Patent Nos. 6,337,746 &amp; 6,618,157



[http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002356/cv\\_mfc6490w\\_usaeng\\_soft\\_d.pdf](http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002356/cv_mfc6490w_usaeng_soft_d.pdf), p.14 (3/24/11)

said printing device printing the graphic image in response to image data in a first format;

The formatted data at the printer engine is provided in a different format than the data stored in the RAM, namely a first format specific to the printing device's formatting requirements. The Accused System and Method is designed to print on a substrate. For example, the Accused System and Method is used for cut-sheet materials.

#### Print

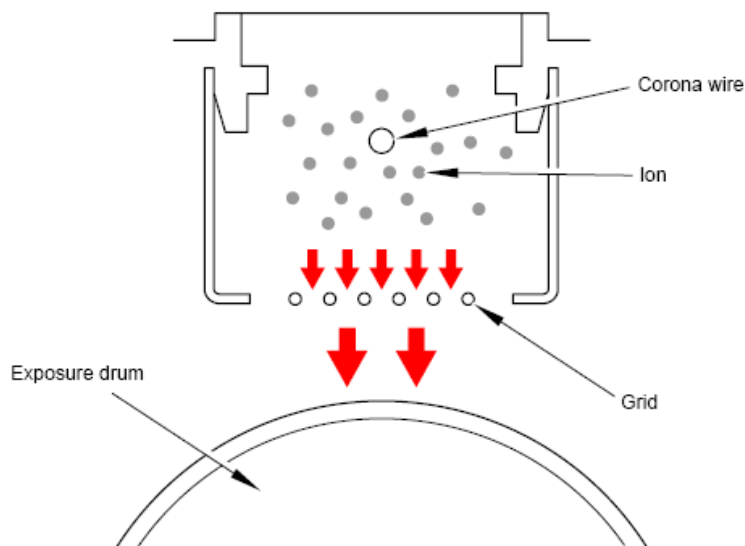
[back to top](#)

<b>Print Technology</b>	Digital Color LED
<b>Consumable Type</b>	Toner Cartridge & Drum Unit
<b>Max. Black Print Speed (ppm)</b>	17ppm Black
<b>Max. Color Print Speed (ppm)</b>	17ppm Color
<b>Print Resolution (maximum dpi)</b>	Up to 600 x 2400 dpi
<b>Standard Input Paper Capacity (sheets)*</b>	250 Sheet Paper Capacity
<b>Multi-purpose Tray</b>	Single-sheet manual bypass slot
<b>Standard Interface(s)</b>	Ethernet and Hi-Speed USB 2.0
<b>Standard Memory (MB)</b>	64MB
<b>Optional Memory (MB)</b>	Yes (up to 576MB)*
<b>Printer Driver Compatibility†</b>	Windows® & Mac OS®
<b>Mobile device printing app‡</b>	Brother® iPrint&Scan free app download for wireless printing (JPEG images) from and scanning to your Android™ Smartphone
<b>Emulation(s)</b>	PCL6 & BR-Script 3‡
<b>Secure Print Function</b>	Yes
<b>Maximum Monthly Duty Cycle‡</b>	25,000 pages
<b>Recommended Monthly Print Volume‡</b>	300 to 1,500 pages

<http://www.brother-usa.com/MFC/modeldetail.aspx?PRODUCTID=MFC9120CN&tab=spec>

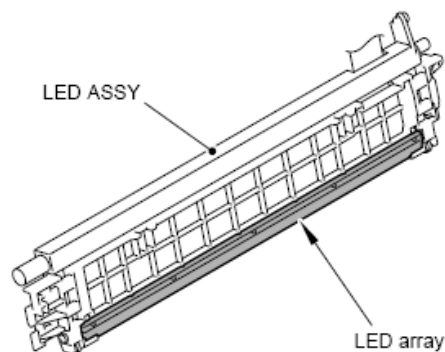
**U.S. Patent Nos. 6,337,746 & 6,618,157****Charging**

The exposure drum needs to be evenly electrified to coat toner beautifully on the exposure drum. Ions are produced by supplying high-voltage power to the corona wire. The flow of the ion charge is controlled by the constant voltage of the grid approximately 700 V and electrified the exposure drum surface evenly.

**Exposure**

Exposure is conducted by LED (Light Emitting Diode) arrays.

Four LED arrays for K, Y, M and C are mounted as an LED ASSY on the top cover unit of the main unit. These four LED arrays do not emit different colors corresponding to toner colors, and they are the same parts in terms of structure.

**Fig. 2-22**

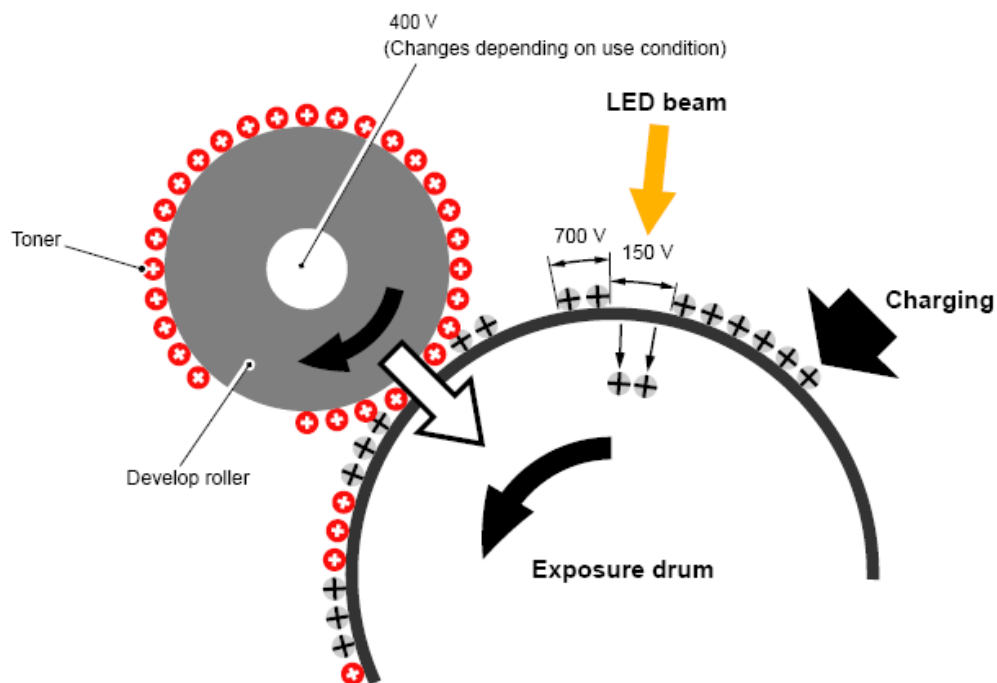
On the PCB in the LED array, 4,992 LEDs, which correspond to the total number of the dots of the 600-dpi print head, are arranged in a staggered pattern. The lens array forms image on the exposure drum using the light emitted from the LEDs. The surface potential on the exposure drum, which is evenly charged, is lowered by exposure, and consequently image is formed.

## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

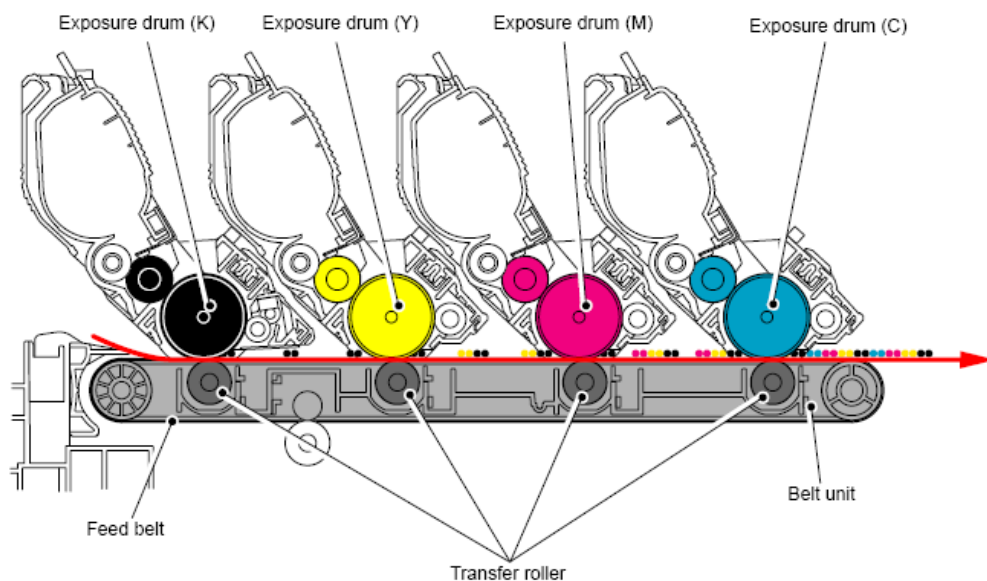
**Development**

Toner is attracted to the latent-image area on the exposure drum where surface potential is lowered due to exposure.

By controlling the developing bias voltage supplied to the develop roller, the amount of toner taken to the exposure drum is adjusted to keep printing density constant.

**3.6.4 Transfer**

By applying a minus charge to the transfer roller of the belt unit, the toner adhered to the exposure drum is transferred to paper which is traveling on the feed belt.



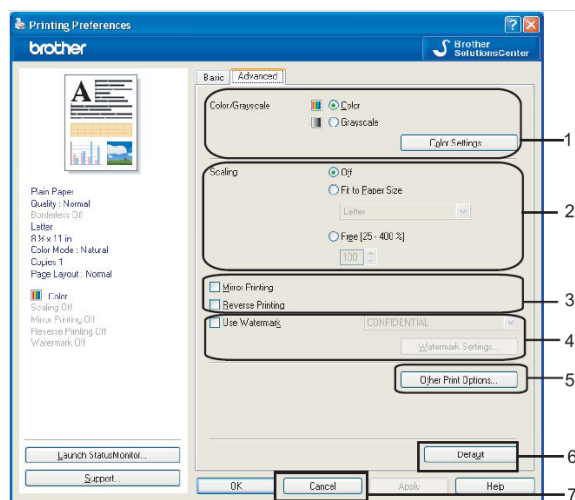
Brother MFC-9120CW Service Manual, p. 2-24 thru 2-26



## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

said means for storing image data storing image data in a second format different from the first format; and

RAM on the computer stores image data. The format of the stored data is different than that which is sent to the printer.



[http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002356/cv\\_mfc6490w\\_usaeng\\_soft\\_d.pdf](http://welcome.solutions.brother.com/BSC/public/files/dlf/doc002356/cv_mfc6490w_usaeng_soft_d.pdf), p.14 (3/24/11)

#### Full Driver & Software Package

**We recommend this download to get the most functionality out of your Brother machine.** This is a comprehensive file containing all available drivers and software for the Brother machine.

Language	Version	Size	Release Date	File
English	A2	43.25MB	12/27/2010	<a href="#">Download &amp; Information</a>

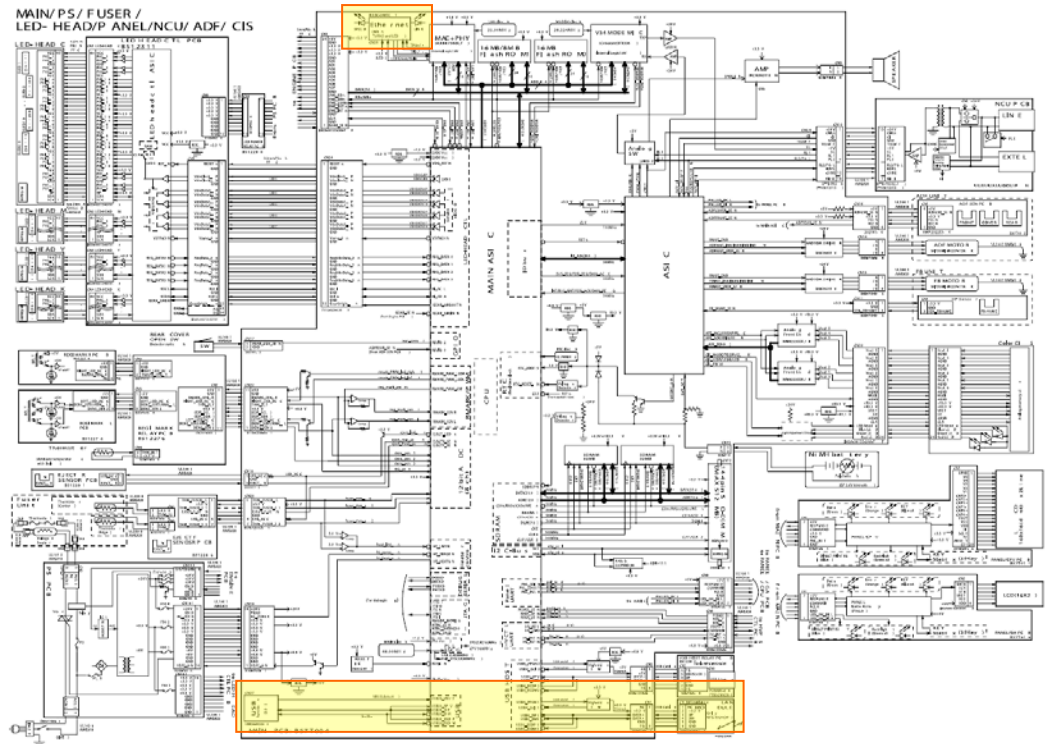
[http://welcome.solutions.brother.com/bsc/public/us/us/en/dlf/download\\_index.html?reg=us&c=us&lang=en&prod=mfc9120cn\\_all&dlid=&flang=English&os=7&type2=-1](http://welcome.solutions.brother.com/bsc/public/us/us/en/dlf/download_index.html?reg=us&c=us&lang=en&prod=mfc9120cn_all&dlid=&flang=English&os=7&type2=-1) (3/31/11)

said means for transferring stored image data comprising conversion means for converting image data in the second format into image data in the first format by multiplexing different portions of the image data in the second format and for delivering image data converted into the first format to said printing device.

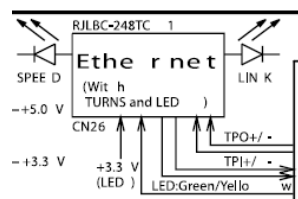
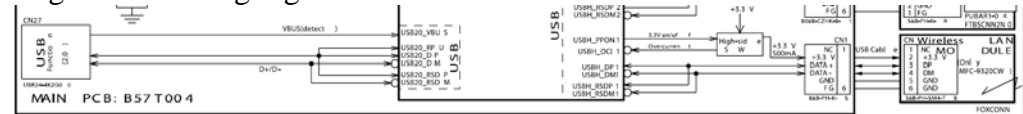
Image data stored in RAM is converted and formatted (including multiplexed) for delivery to the print engine over data interfaces.



## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

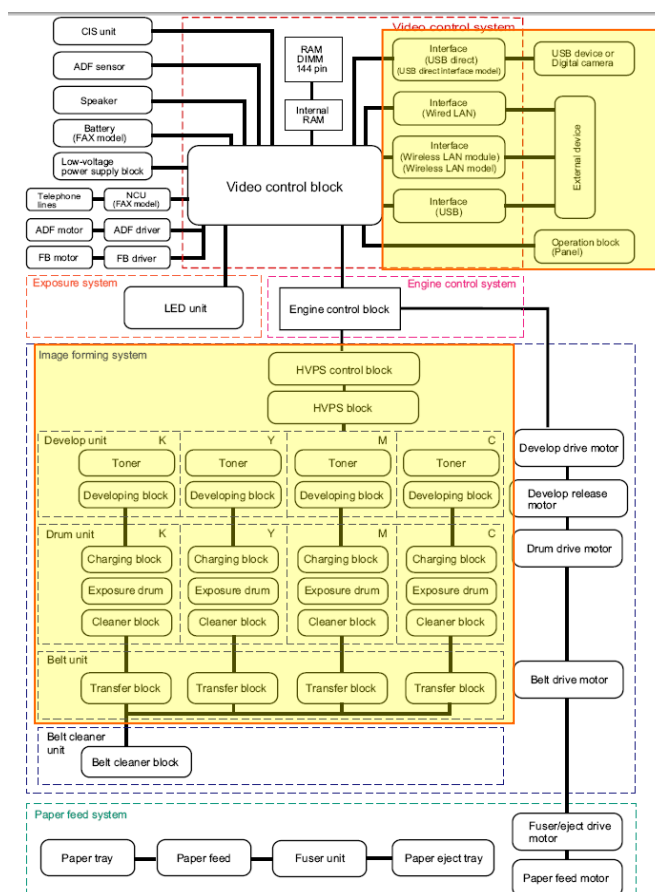


Larger View of highlighted areas



## U.S. Patent Nos. 6,337,746 &amp; 6,618,157

Brother MFC-9120CW Service Manual, p. 8-12



Brother MFC-9120CW Service Manual, p. 2-1

2. The apparatus according to claim 1 wherein said means for storing image data are operative for storing a quantity of image data sufficient to print the graphic image on the entire substrate, and said means for transferring are operative for continuously transferring the quantity of image data sufficient to generate the graphic image on the entire substrate.

The Accused System and Method is driven by a computer containing a motherboard with a data bus and memory. The computer is controlled by an operating system. Images are stored in RAM. The RAM on the computer is operative to store a sufficiently large amount of image data to print an entire color graphic image on the surface of the full substrate. The interface card transfers the entire quantity of image data for generating the graphic image on the entire substrate without reloading RAM or ceasing print operations.